STATE of ARIZONA

Government Information Technology Agency	**Statewide POLICY** P710	**TITLE: Network Architecture** **Effective Date: September 30, 2003**

1. AUTHORITY

The Government Information Technology Agency (GITA) shall develop, implement and maintain a coordinated statewide plan for information technology (A.R.S. § 41-3504(A (1))), including, the formulation of policies to effectuate the purposes of the agency (A.R.S. § 41-3504(A (13))).

2. PURPOSE

Network Architecture defines common, industry-wide, open-standards-based, interoperable network infrastructures providing reliable and ubiquitous communication for the State's distributed information processing environment. It defines various technologies required to enable connections among its citizens, the federal government, cities, counties, and local governments, as well as the private business sector. Network Architecture describes a network infrastructure that supports converged services, as well as accommodating traditional data, voice, and video services, providing the framework and foundation to enable budget unit business processes, new business opportunities, and new methods for delivering service.

3. SCOPE

This applies to all budget units. Budget unit is defined as a department, commission, board, institution or other agency of the state organization receiving, expending or disbursing state funds or incurring obligations of the state including the board of regents and the state board of directors for community colleges but excluding the universities under the jurisdiction of the board of regents and the community colleges under their respective jurisdictions and the legislative or judicial branches. A.R.S. § 41-3501(2).

The Budget Unit Chief Executive Officer (CEO), working in conjunction with the Budget Unit Chief Information Officer (CIO), shall be responsible for ensuring the effective implementation of Statewide Information Technology Policies, Standards, and Procedures (PSPs) within each budget unit.

4. POLICY

State agencies shall utilize Network Architecture target technologies[1], methodologies, standards, and best practices to develop, implement, and/or acquire networking systems. Network Architecture specifies how information-processing resources are interconnected and documents the standards for topology (design of how devices are connected together), transport media (physical medium or wireless assignments), and protocols (for network access and communication).

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[1] The Arizona *Target Technology Table* is available at: http://gita.state.az.us/enterprise_architecture/.

4.1. NETWORK ARCHITECTURE TOPOLOGY

Network Architecture components of topology include the following:

- Local Area Networks (LANs) consist of communications systems of multiple interconnected workstations, peripherals, data terminals, or other devices confined to a limited geographic area consisting of a single building or a small cluster of buildings.
- Campus Infrastructure consists of communication systems between groups of buildings within a larger geographical area. Campus Infrastructure typically interconnects disparate communities of interest for information sharing and interoperability using private facilities or public carrier communication facilities.
- Wide Area Networks (WANs) and Metropolitan Area Networks (MANs) are communications systems that span a very large geographical area. WANs and MANs interconnect distributed branch facilities of agencies and also may function as aggregation mechanisms for disparate agencies with common communication requirements. WANs and MANs typically use or provide public carrier communication facilities.

Network Architecture components of transport media include: wire-based, which uses physical media (copper, fiber) to connect between two or more points, and wireless (mobile, voice/data, microwave, and satellite).

Network Architecture protocols address the set of rules for providing network access and communication.

4.2. NETWORK ARCHITECTURE GENERAL PRINCIPLES

The planning, design and development of Network Architecture are guided by the following general principles that support the State's strategic business goals and objectives.

4.2.1. Networks provide the infrastructure to support budget unit business and administrative processes.
4.2.2. Networks shall be operational, reliable, and available (24x7x365) for essential business processes and mission-critical business operations.
4.2.3. Networks shall be designed for growth and adaptability.
4.2.4. Networks shall use industry-proven, mainstream technologies based on open- and/or pervasive-industry standards and open architecture.
4.2.5. Networks shall be designed with confidentiality and security of data as a high priority.
4.2.6. Network access should be a function of authentication and authorization, not location.
4.2.7. Networks should be designed to support converged services while accommodating traditional data, voice, and video services and to be "application aware" in the delivery of business-critical application systems.

Supporting rationale for the above principles can be found in the *Target Network Architecture* document available at http://gita.state.az.us/enterprise_architecture.

4.3. NETWORK ARCHITECTURE TARGET TECHNOLOGIES
Components of the Target Network Architecture are reviewed and refreshed on a regular and scheduled basis to address major shifts in technology, as well as the emergence and adoption of new technology-related industry or open standards. Review criteria shall adhere to the lifecycle process described in *Statewide Policy P700, Enterprise Architecture*.

4.4. NETWORK ARCHITECTURE STANDARDS
Network Architecture Standards define appropriate open- and pervasive-industry-standards for topology, transport media, and protocols, while still enabling old and new systems to work together. Refer to *Statewide Standard P710-S710, Network Infrastructure*, for further information.

4.5. IMPLEMENTATION
Arizona's EWTA has been designed to maximize current investments in technology, provide a workable transition path to targeted technologies, maintain flexibility, and to enhance interoperability and sharing. Network Architecture implementations shall adhere to implementation strategies described in *Statewide Policy P700, Enterprise Architecture*.

Network Architecture shall be implemented in accordance with *Statewide Policy P800, IT Security*, and applicable Statewide Standards for Security.

4.6. CONFORMANCE OF IT INVESTMENTS AND PROJECTS TO EA
To achieve the benefits of an enterprise-standards-based architecture, all information technology investments shall conform to the established EWTA that is designed to ensure the integrity and interoperability of information technologies for State agencies. *Statewide Standard P340-S340, Project Investment Justification (PIJ)*, defines conformance with the established EWTA and associated Statewide Policies and Standards. Variances from the established EWTA shall be documented and justified in the appropriate section of the PIJ document.

4.7. APPLICABILITY TO OTHER STATEWIDE EA POLICIES AND STANDARDS
Statewide Policy P710, Network Architecture, adheres to and demonstrates the purpose established in *Statewide Policy P100, Information Technology*.

Statewide Policy P710, Network Architecture, adheres to the principles, governance, lifecycle process, and implementation elements described in *Statewide Policy P700, Enterprise Architecture*.

5. DEFINITIONS AND ABBREVIATIONS

Refer to the Glossary of Terms located on the GITA website at http://www.gita.state.az.us/policies_standards for definitions and abbreviations.

6. REFERENCES

6.1. A. R. S. § 41-621 et seq., "Purchase of Insurance; coverage; limitations, exclusions; definitions."
6.2. A. R. S. § 41-1335 ((A (6 & 7))), "State Agency Information."
6.3. A. R. S. § 41-1339 (A), "Depository of State Archives."
6.4. A. R. S. § 41-1461, "Definitions."
6.5. A. R. S. § 41-1463, "Discrimination; unlawful practices; definition."
6.6. A. R. S. § 41-1492 et seq., "Prohibition of Discrimination by Public Entities."
6.7. A. R. S. § 41-2501 et seq., "Arizona Procurement Codes, Applicability."
6.8. A. R. S. § 41-3501, "Definitions."
6.9. A. R. S. § 41-3504, "Powers and Duties of the Agency."
6.10. A. R. S. § 41-3521, "Information Technology Authorization Committee; members; terms; duties; compensation; definition."
6.11. A. R. S. § 44-7041, "Governmental Electronic Records."
6.12. Arizona Administrative Code, Title 2, Chapter 7, "Department of Administration Finance Division, Purchasing Office."
6.13. Arizona Administrative Code, Title 2, Chapter 10, "Department of Administration Risk Management Section."
6.14. Arizona Administrative Code, Title 2, Chapter 18, "Government Information Technology Agency."
6.15. State of Arizona Target Network Architecture.
6.16. Statewide Policy P100, Information Technology.
6.17. Statewide Policy P136, IT Planning.
6.18. Statewide Policy P340, Project Investment Justification (PIJ).
    6.18.1. Statewide Standard P340-S340, Project Investment Justification (PIJ).
6.19. Statewide Policy P700, Enterprise Architecture.
6.20. Statewide Policy P800, IT Security.
6.21. Statewide Standard P710-S710, Network Infrastructure.

7. ATTACHMENTS

None